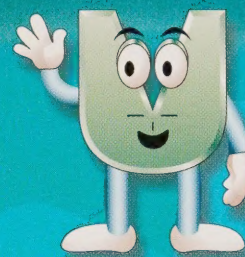


CAI
HW
- Z136



3 1761 11556512 9



Science, tobacco and YOU!

A tobacco prevention
teaching resource
for grades 4 - 6



- includes CD-ROM, teacher's guide, flash cards and exercise sheets
- ideal for use in health, science, language arts, drama, visual arts and mathematics curricula



Health
Canada

Santé
Canada

Canada

Science, tobacco and YOU!

*Health Canada welcomes you to **Science, Tobacco and You**, a tobacco prevention resource suitable for use with students in grades 4, 5 and 6. It consists of a CD-ROM and a teacher's information package. This resource can be used in a number of different curriculum areas. Although it is most congruent with your health, science, or language arts curricula, opportunities are also provided for use in drama and visual arts. As well, mathematics teachers can use the content to teach graphing and computer teachers can use the CD-ROM as part of the computer literacy program while teaching students the benefits of a tobacco-free lifestyle.*

This school-based program can play an important role in preventing and reducing tobacco use. Everyone wants to help our young people lead long and healthy lives. The negative effects of tobacco use and exposure to second-hand smoke are well documented: over 45,000 deaths in Canada are attributed to tobacco use each year. These deaths are preventable.

*Knowledge is a prerequisite to evaluating information. By using **Science, Tobacco and You**, you will be contributing to your students' knowledge and their ability to resist pressures to use tobacco.*

TABLE OF CONTENTS

Introduction	2
CD-ROM Contents	3
Virtual Body Lab	3
Community Research Lab.....	3
CD-ROM Access	3
Buttons of Note	5
Getting Started	7
Classroom Lesson 1	8
Classroom Lesson 2	9
Classroom Lesson 3	10
Quick Picks	11
Related Educational Resources	13
Black Line Masters	14
K-W-L.....	14
Virtual Body Lab Scavenger Hunt	15
Truth or Lie	18
Crossword Puzzle	19
What's the Question?	20

Health Canada
Tobacco Control Programme
Address locator 3506C
Ottawa Canada, K1A 0K9
E-mail: TCP-PLT-questions@hc-sc.gc.ca
Telephone: 1-866-318-1116 toll-free
Fax: (613) 954-2377

There's much more information about tobacco
on our Web site at www.GoSmokefree.ca

© Her Majesty the Queen in Right of Canada, 2003

This publication may be reproduced for non-commercial purposes

Aussi offert en français

Catalogue: H46-2/03-302E

ISBN: 0-662-33629-1



INTRODUCTION

This *Science, Tobacco and You* Teacher's Guide provides a menu of activities that can be used in a variety of settings to help students learn about tobacco and its negative effects on the human body. Students can:

1. participate in the classroom lessons that are suggested in the guide,
2. work on their own or with a partner at a classroom computer using the Quest cards included,
3. interact with the CD-ROM on their own, choosing to complete some of the suggested activities.

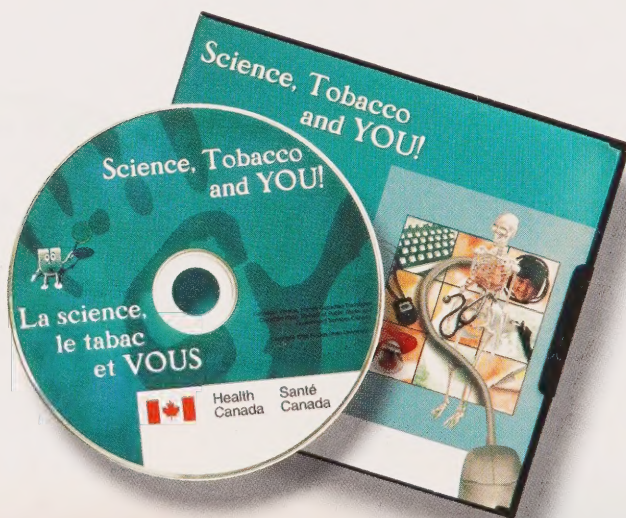
It is intended that the CD-ROM be used in conjunction with the classroom lessons and that it be networked in the computer lab for ease of use. The bar at the bottom of each screen on the disk can connect students directly with the Health Canada Web Site which has further information

on tobacco and includes a youth section that students will find very helpful as they pursue the activities.

Your students will enjoy the interactive aspects of the CD-ROM. Buttons are self-explanatory and easy to use. Although the voice-over component assists students who may have some difficulty reading the material, you may find it advisable to pair students so that they can help each other with some of the difficult vocabulary.

You may choose to use one or all of the Sample Lessons. Although Sample Lesson One is designed to be the introductory lesson, it is possible to skip it and still use the other lessons. They are not sequenced. Each is designed to get students involved in using the CD-ROM as a research tool to learn about the effects of tobacco on the body.

To give you even more flexibility, there are several very short assignments, called Quick Picks. They take very little time, are fun and can be used by your whole class or by individuals. However you choose to use this resource, making students aware of the harmful effects of tobacco and helping them live tobacco-free lives is the goal. By using it, you will make a positive difference in the life of the children you teach.



Virtual Body Lab

Body Systems

- Nervous System
 - The Brain
 - Definitions for each part of the brain
 - Effects of tobacco on the nervous system (short term and long term)
 - Activity – Lab notebook exercise on cravings
 - Spinal Cord and Nerves
 - Definitions
 - Activity – experiment demonstrating reflexes
 - Getting Hooked
 - Information on addiction and nicotine
 - Types of tobacco products
 - Quitting tobacco use and withdrawal
- Respiratory System
 - Specific information about the nose, mouth, throat, lungs and diaphragm
 - Effects of tobacco on the respiratory system, including specific parts of the system
 - Respiratory diseases
 - Activity – graphing exercise on breathing
- Circulatory System
 - Specific information about blood, blood vessels and heart
 - Effects of tobacco on the circulatory system and

specific parts within the system (short term and long term)

- Activity – taking and charting pulse rates
- Activity – recording information about the effects of lack of oxygen on the human body

Environmental Tobacco Smoke

- Second-hand smoke and its effects on adults, children and babies

Community Research Lab

Attitudes

- Conduct a community research assignment
- Activity – write an article about the research results

Environment

- Pollution from cigarette butts
- Internet research assignment
- Data collection and graph assignment
- Activity – poster-making

Addiction

- Symptoms
- Quitting tobacco use
- Activity – drawing describing addiction and how tobacco users feel

CD-ROM ACCESS

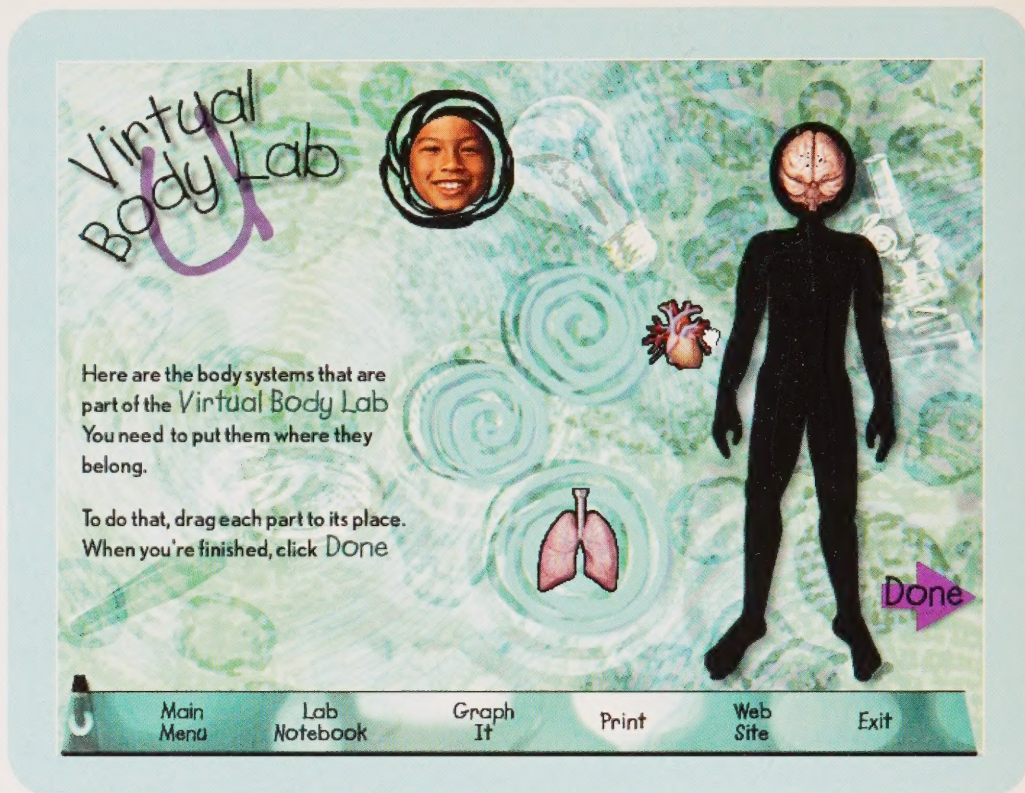
Insert the *Science, Tobacco and You* CD-ROM into the computer. Double click on the icon 'Smart U' and the process of accessing the tobacco informational material has begun. Choose which language is preferred: French or English. Students can log in by typing their first and last name and using birth dates as passwords.

To continue, students must answer the questions and create a picture of themselves. Although there is the option to insert a digital photograph, it is suggested that students construct an imaginary image of themselves called a *Virtual U*. They have the opportunity to select hairstyle, faces, clothes, shoes, and skin tone. And, if they don't like their creation there is always the opportunity to change it.

The next two screens present the main menu:

VIRTUAL BODY LAB

How does a healthy body work? How does tobacco affect your health? Explore three body systems and find out the scientific answers.



COMMUNITY RESEARCH

Why do people use tobacco? How do they feel about it? How do people who don't use tobacco feel about it? Get out into your community, ask questions and see what you learn.

- Students now can become scientists able to easily access information about tobacco and health-related issues in an interesting, interactive way.



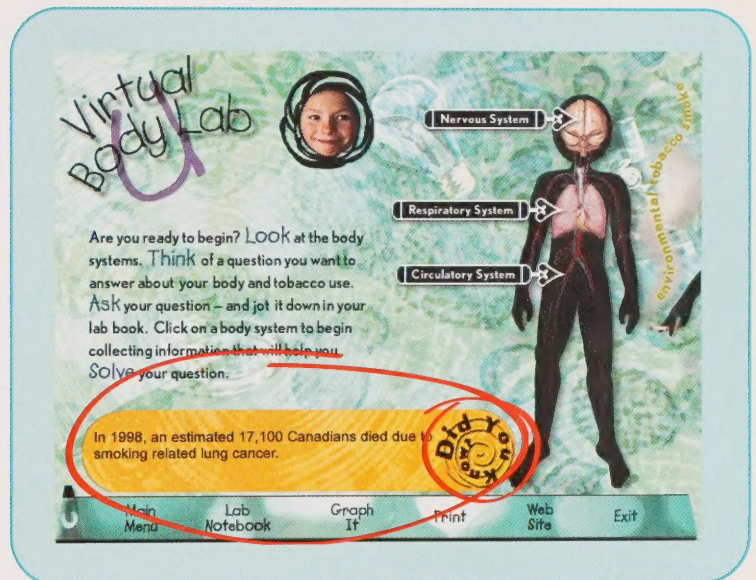
BUTTONS OF NOTE

The bar at the bottom of each screen allows students to access the main menu or exit at any time. It also displays the following features:

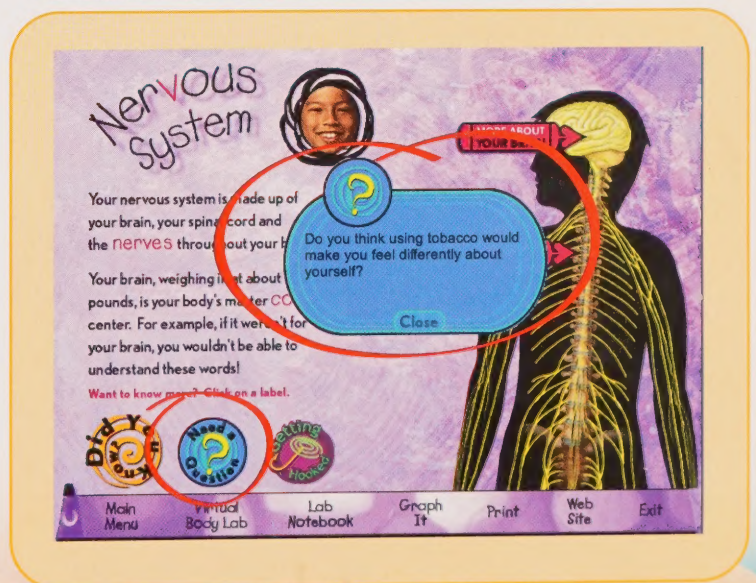
- **Lab Notebook** – allows students to use notebook pages to complete their assignments
- **Graph It** – gives students help in graphing data they have collected
- **Print** – allows page from Lab Notebook or Graph It to be printed
- **Web Site** – connects directly to the Health Canada home page



Did You Know? – presents one important fact about the topic



Need a Question – provides a variety of questions pertaining to the topic



Respiratory System

Effects of Tobacco

Your **respiratory system** is your group of body parts that work together to help you get the oxygen you need for energy and growth.

It is **also** the way your body gets rid of carbon dioxide. **Carbon dioxide** is a waste gas that your body produces when combining food and oxygen for growth and energy.



Main Menu

Virtual Body Lab

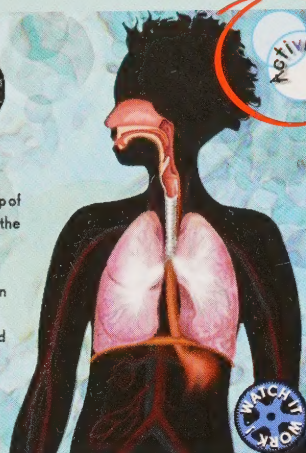
Lab Notebook

Graph It

Print

Web Site

Exit



Activity



Activity – suggests an interesting exploration students can pursue

Respiratory System

Effects of Tobacco

The trachea then **branches** off into two smaller tubes, called **bronchus** **bronchi**, going into your lungs. The bronchi branch into even smaller tubes, called bronchioles.

Use the slider bar to **observe the steps** - and to see how much you know.

Back Next



Main Menu

Virtual Body Lab

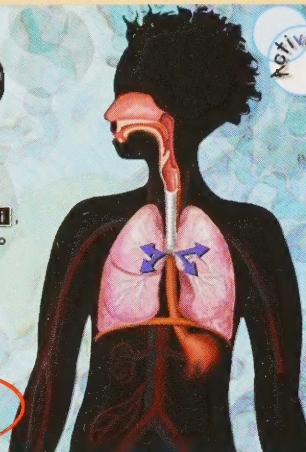
Lab Notebook

Graph It

Print

Web Site

Exit



Activity

Slider Bars – allow students to activate various illustrative functions (e.g. lungs expanding and contracting) and to participate in short quizzes



Circulatory System

BLOOD VESSELS

Effects of Tobacco

activity

Your blood travels through your body, delivering oxygen to all your organs. Blood vessels are the tubes that hold the blood as it circulates. There are three kinds of blood vessels. They are arteries, veins, and capillaries.

Want to know more? Click on a label.



Main Menu

Virtual Body Lab

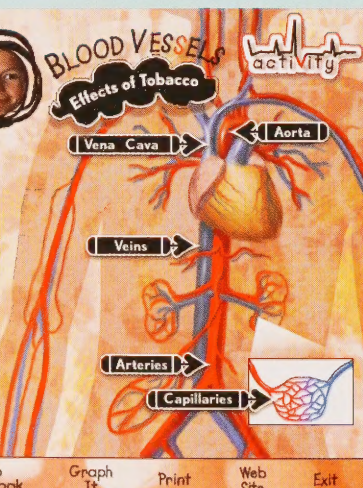
Lab Notebook

Graph It

Print

Web Site

Exit



activity

Vena Cava

Aorta

Veins

Arteries

Capillaries

Watch It Work – allows students to learn more about the topic or to check their comprehension



GETTING STARTED

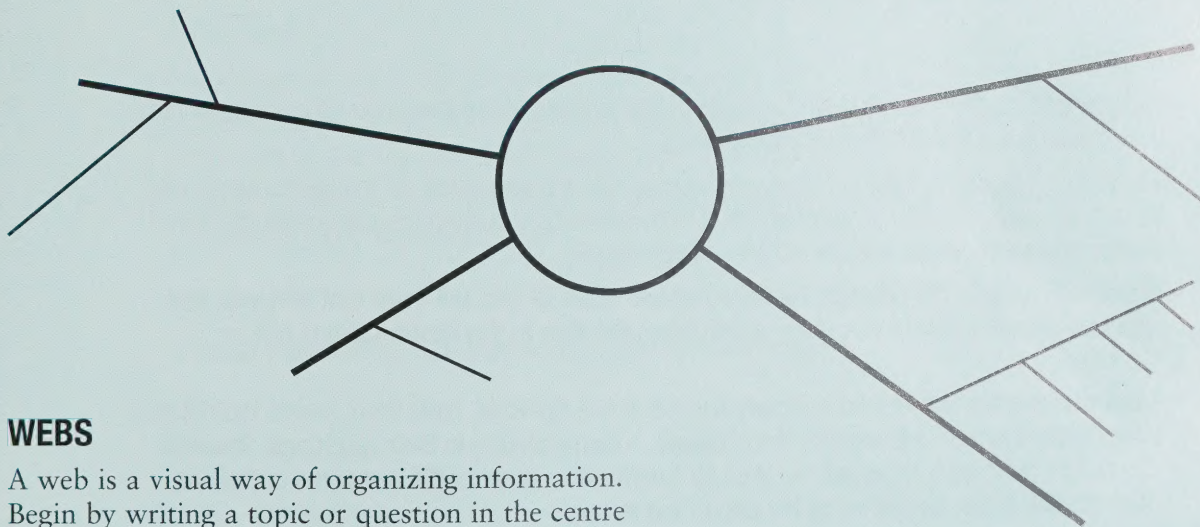
Although students can learn a lot about tobacco and its effects on the body by exploring *Science, Tobacco and You* on their own, it is suggested that the program be networked so that they can work together on group or class projects. If this is not possible, consider setting up a series of Quests at the classroom computer station. Nine Quest cards are provided.

Whether you choose whole-class lessons or have individuals work on their own, introduce the CD-ROM to your entire class. One introductory idea is to use a K-W-L activity to get your students interested in learning about the dangers of tobacco use.

Another suggestion is to work together as a group and construct a web of tobacco facts and another web of questions. If the webs are made on large sheets of chart paper, students can write the answers to the questions as they do their research. Then – give students time to explore the CD-ROM and the Health Canada web page in order to find answers to their questions.

K-W-L (Know-Want to Know-Learned)

Use the black line master provided and ask students to work on their own or in pairs to list all the things they know about tobacco in the Know column. Have them write questions about what they Want to Know in the second column. These may be shared and amalgamated into one large classroom chart. Students then research the answers to their questions and complete the Learned column.



WEBS

A web is a visual way of organizing information. Begin by writing a topic or question in the centre of some chart paper. Then generate a web of ideas. Long, heavy lines can be used for major ideas and shorter, lighter ones can accommodate related questions or comments.

If students are working on individual webs, encourage them to use color and to add drawings and diagrams.

Let's Learn! The More You Know the Better You Feel!

Purpose

- To discover what students know about tobacco and its effects on the body.
- To introduce the *Science, Tobacco and You* CD-ROM

Teacher Preparation

- **Copy** the K-W-L handout for each student.
- **Network** the CD-ROM in the computer lab.
- **Find** large sheets of chart paper and felt pens.

Engaging the Learners

- **Write** TOBACCO on the board and have students brainstorm what they know about the topic. List their responses on a chart as they list them on their K-W-L handout. The chart can be part of a Tobacco bulletin board display.

Activities

- **Ask** students to think about what they would like to learn about tobacco and have them note their questions in the WANT TO KNOW column.
- **Generate** a class list of the questions on a chart that will be posted on a bulletin board until all of them are answered. If there are a lot of questions, have students categorize them and assign groups of students to investigate each category.
- **Show** the students the *Science, Tobacco and You* CD-ROM and tell them that they can find answers to their questions by using it and its connection to the Health Canada site on the web.
- **Lead** students through the introductory section of the CD-ROM, have them create their Virtual U and allow them time to explore the contents, noting answers to their questions. Students can record their work by accessing the Lab Notebook located on the bar at the bottom of each screen. It can be printed at the end of the lesson.

Closing

- **Share** the answers from the students and have them write the answers on the class chart using a colored marker.

Note: Students may require more time to find answers to all their questions. They may complete the individual K-W-L charts for homework or spend another computer period continuing to explore the CD-ROM and internet sites.

All Systems 'GO'!

Purpose

- To explore three body systems and find out how tobacco effects each of them.

Teacher Preparation

- **Copy** the Scavenger Hunt handout for each student.
- **Network** the CD-ROM in the computer lab.

Engaging the Learners

- **Ask** students if they have ever been on a Scavenger Hunt. Have them share their experiences.
- **Tell** them that today they will be going on a Scavenger Hunt through a CD-ROM called *Science, Tobacco and You*.

Activities

- **Distribute** copies of the Scavenger Hunt handout.
- **Lead** students through the introductory section of the CD-ROM and have them create their Virtual U if this is their first exposure to the program.
- **Guide** students to the Virtual Body Lab and then allow them a set amount of time to work on their Scavenger Hunt.

Closing

- **Check** the answers. You may want to distribute participation prizes.

Chokin' on Their Smokin'

Purpose

- To research the harmful effects of second-hand smoke.

Teacher Preparation

- **Network** the CD-ROM in the computer lab.
- **Gather** a selection of colored paper and felt pens that students can use to enhance their public service announcements.

Engaging the Learners

- **Ask** students if they have ever been bothered by tobacco smoke. Allow them time to exchange their experiences.

Activities

- **Tell** students that they are to explore the *Science, Tobacco and You* CD-ROM and the Health Canada web site to find all the information they can about the harmful effects of second-hand smoke.
- **Ask** students to list their findings in the Lab Notebook or on sheets of paper.
- **Group** students in threes or fours and have them use their data to create public service announcements about the harmful effects of second-hand smoke.

Closing

- **Invite** each group to present its public service announcement to the rest of the class. Consider video taping their presentations. They could be shared with another class or at a school assembly or at your school's next Open House.

QUICK PICKS

These are short and interesting activities for students to help them know and understand more about the dangers of tobacco use. Use them as warm-ups first thing in the morning or complete them as a 'ticket out the door' before students go home for the day. Some can be used as part of your planned tobacco prevention program and some are suitable as activities for your 'extra things to do' box.

Crossword Puzzle

Find this puzzle in the **Black Line Masters** section and make copies for your students. The vocabulary is taken from the *Science, Tobacco and You* CD-ROM.

ANSWERS:

Across

2. emphysema
3. oxygen
4. tar
5. cancer
7. larynx

Down

1. diaphragm
2. esophagus
4. trachea
6. cilia

Let's Rant!

A rant is an extravagant, noisy speech on a topic you care about very much. Students can create a rant about any aspect of tobacco use. Second-hand smoke or chewing tobacco are good topics. Students are encouraged to shout and gesticulate wildly as they present their rant to the rest of the class.

Give Me Five!

Students trace one of their hands and list on each finger one reason why they don't want to smoke. If these are done on colored construction paper and cut out they make an interesting bulletin board display.

QUICK PICKS

What's the Question?

Students are supplied with answers and they must come up with the question. Once they have used the answers supplied in the **Black Line Masters** section they could make up their own answers and questions. This can also be played as a quiz game with the whole class as well.

ANSWERS:

1. What is carbon monoxide?
2. What is spit tobacco?
3. What is nicotine?
4. What is the respiratory system?
5. How does mouth cancer begin?
6. What is the trachea?
7. What is the esophagus?
8. What is the nose?
9. What is cancer?
10. What is the circulatory system?

Truth or Lie

This Truth or Lie activity is based on the Circulatory System information found on the *Science, Tobacco and You* CD-ROM. Find the activity in the **Black Line Masters** section.

ANSWERS:

- | | | | |
|------|------|------|-------|
| 1. T | 4. L | 7. L | 10. T |
| 2. L | 5. T | 8. T | |
| 3. T | 6. T | 9. L | |

Ways to Say "No" to Tobacco

Have students work in pairs and think of different ways to say, "no", if someone suggests they have a cigarette. Pairs can share their role plays with the class.

Truth in Advertising

Have students create an advertisement that tells the truth about smoking. As an alternative, have them design a cigarette package with 'nothing but the truth' on it. Students will find lots of facts on the *Science, Tobacco and You* CD-ROM or at any of the web sites listed in Related Educational Resources.

RELATED EDUCATIONAL RESOURCES

www.GoSmokefree.ca/youth

This Health Canada Web site has all the facts about smoking (including along list of what's in tobacco smoke) as well as the proven Quit 4 Life program. Check out the polls, quizzes and get a reality check on second-hand smoke too.

www.healthcanada.ca/blueribbon

Check out the Blue Ribbon campaign started by students in British Columbia. It focuses on tobacco-free living.

www.ayn.ca

This Aboriginal Youth Network is produced by youth for youth. It highlights social and health issues facing young Aboriginals in Canada.

www.lung.ca

This Canadian Lung Association site offers information on lung disease. Check out the section on tobacco. You will find specific information for teachers and some great interactive games for students.

www.smokingsucks.nfld.net

This site, developed by the Alliance for the Control of Tobacco (ACT) in cooperation with the Teen Tobacco Team associated with the Newfoundland and Labrador Department of Health, has a wealth of wonderful information for young people about tobacco. Titled "The Exposer", kids are given many opportunities to find out about the dangers of tobacco. Some parts of this site are very graphic but the site has a powerful anti-tobacco message for youth.

www.tobaccofacts.org

This site, produced by the British Columbia Ministry of Health, offers a multitude of resources, tools, information, and downloadable posters on the dangers of tobacco use. It contains material for students, teachers and parents.

www.cyberisle.org

This site is part of the Teen Net Research project at the University of Toronto (Public Health Sciences). Although you must register to enter, all information given is confidential and anonymous. It contains much valuable, interesting information on tobacco as well as other health issues pertinent to young people.

www.tobaccofreekids.org

Supported by the Campaign for Tobacco-Free Kids based in Washington, D.C., this site has a lot of information on the tobacco industry. Students will be most interested in the youth action and tobacco ad gallery links.

www.whyyfiles.org

This site presents the science behind the news. Search smoking or tobacco to find very current information. The Graduate School, University of Wisconsin-Madison, supports the site.

www.canadian-health-network.ca/1tobacco.html

This site offers reliable resources on tobacco products and their known health effects. It has sections on how to prevent youth from smoking, tobacco facts and some quizzes and games for kids to enjoy.

www.cancer.ca

This site presents the most recent research on cancer. It has a section devoted to tobacco and youth. It also provides links to other tobacco web sites.

There are many tobacco prevention and cessation sites on the web.

Use keywords such as:

nicotine + addiction

tobacco + disease

environmental tobacco

tobacco + prevention

smoking + youth

second-hand smoke

Add Canada or your province as a search word to give you the Canadian perspective.

K-W-L

[illegible]

VIRTUAL BODY LAB SCAVENGER HUNT

- ① **Find the Virtual Body Lab screen** that shows the brain, heart and lungs. Drag each body part into its right location. When you have done that, give yourself a check mark here.

Answer: ☐



- ② **Find the 'Did You Know' button** that tells how many Canadians are estimated to have died due to smoking related lung cancer. How Many?

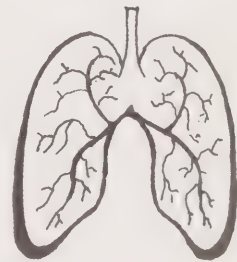
Answer: _____

- ③ **Name the three body systems** you can investigate in the Virtual Body Lab.

Answer: 1. _____ 2. _____ 3. _____

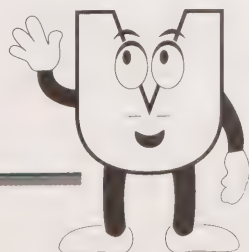
- ④ **You will find** this answer by clicking on one of the 'Did You Know' buttons. In 2001, what percentage of Canadian youth ages 15-19 were non-smokers?

Answer: _____. So, most kids DON'T smoke!!!



- ⑤ **Go to Respiratory System.** Watch it work. Click on Mouth. Click on Effects of Tobacco. Check out each topic. YUCK!! Write down one thing that you learned.

Answer: _____



6 TRUE OR FALSE? Kids who smoke are much more likely to abuse alcohol and use illegal drugs than kids who don't.

Answer: _____

7 Go to Nervous System. Click on More About Your Brain, then Effects of Tobacco. What is one effect tobacco has on the brain?

Answer: _____

8 Find this answer by searching the Respiratory System. What is the most common respiratory disease a person can get from using tobacco?

Answer: _____

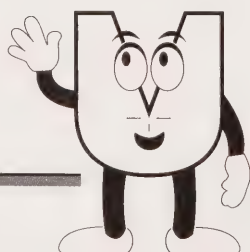
9 Find the lung X-ray in the Respiratory System section by clicking on Effects of Tobacco. Move the indicator on the bar to view a healthy lung and an unhealthy lung. Give yourself a check if you notice the difference. Give yourself two checks if you will never smoke.

Answer: ☐ ☐



10 Check this out! Go to Circulatory System. Click on Blood. Click on Activity. Use the slider to see what happens to the body when it is exposed to carbon monoxide. Make a note of what happens and be prepared to tell others.

Answer: _____



11

Go to Circulatory System. Click on Heart. Click on Effects of Tobacco. Now use the cursor to observe the heart rate when you smoke a cigarette or chew tobacco. What happens?

Answer: _____

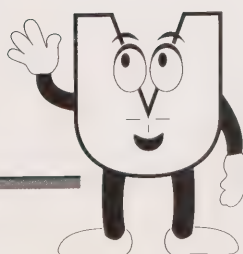
How many items did you find?

Answer: _____

Now that you have learned what tobacco can do to your body systems do you think you will ever smoke or chew tobacco?

Yes ☐ No ☐

Give your reasons:

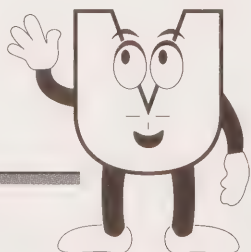


TRUTH or LIE

Write Truth or Lie after each statement. You may use the Circulatory System section of the *Science, Tobacco and You* CD-ROM to help you find the answers.

You do not need to do them in order. Stop when you find three lies.

1. Arteries carry oxygen-rich blood away from the heart. _____
2. Capillaries are large veins. _____
3. It takes about 23 seconds for your blood to circulate through your body. _____
4. Capillary walls are very thick. _____
5. Nicotine is a chemical found in tobacco. _____
6. Nicotine makes your heart beat faster. _____
7. Your blood pressure goes down when you use tobacco. _____
8. Nicotine causes the arteries in your arms and legs to get narrow. _____
9. Always use your thumb to take your pulse. _____
10. When you smoke your blood cells pick up less oxygen. _____



CROSSWORD PUZZLE

Use these words to complete the crossword puzzle.

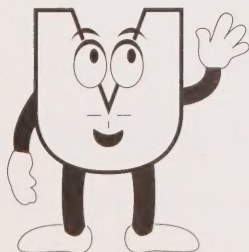
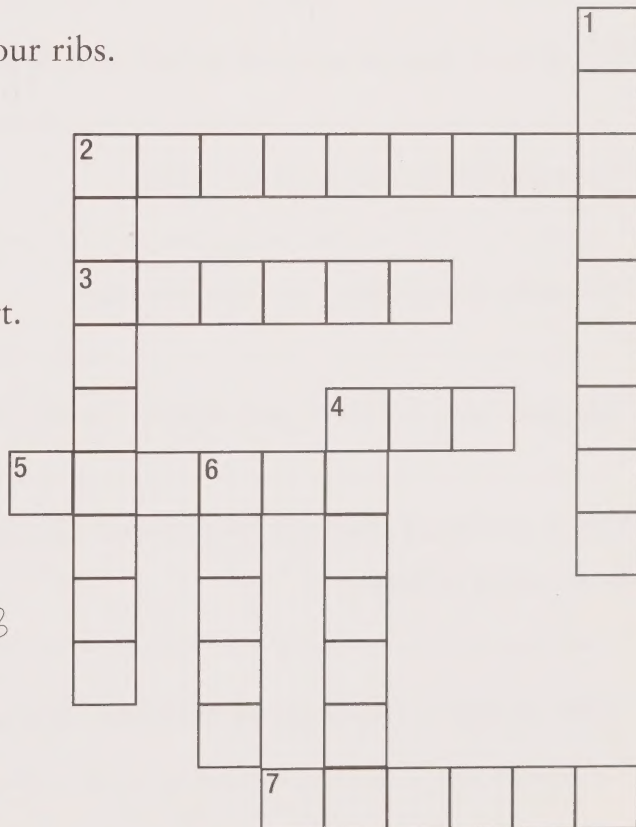
oxygen cancer trachea larynx esophagus
cilia tar emphysema diaphragm

ACROSS

2. Some smokers get this disease which makes it difficult for them to breath.
3. We cannot live without breathing this colorless, odorless gas.
4. Cigarettes have this brown and sticky substance in them that is very harmful to the lungs.
5. This is the most common disease a person can get from using tobacco.
7. This is your voice box.

DOWN

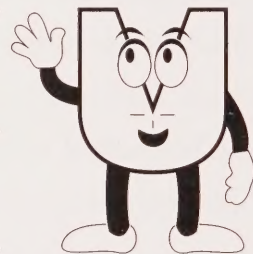
1. This is a sheet of muscle under your ribs.
2. Food goes down this tube.
4. This is your windpipe.
6. These little hairs inside the bronchial tube act like little brooms to sweep out harmful dirt.



WHAT'S THE QUESTION?

Here is a set of answers. Your job is to think of a question that fits with each answer.

1. This poisonous gas is found in cigarette smoke and car exhaust.
? _____
2. You put this finely ground tobacco between the cheek and gum.
? _____
3. This is the addictive drug found in tobacco.
? _____
4. This is your group of body parts that work together to help you get the oxygen you need for energy and growth.
? _____
5. This disease begins as small white or red sores or patches in the mouth.
? _____
6. This tube brings air to your lungs.
? _____
7. This tube brings food to your stomach.
? _____
8. This part of you filters and warms the air when you breathe.
? _____
9. This is the most common respiratory disease a person can get from using tobacco.
? _____
10. This system is made up of the heart, blood vessels and blood.
? _____



Discover the benefits of an education package with activities designed to help students learn about tobacco and its negative effects on the human body.

CD-ROM contents:

Virtual Body Lab

Explore three body systems and discover how tobacco effects the

- nervous system
- respiratory system
- circulatory system.

Community Research Lab

Students become scientists, able to access information about

- public attitudes to smoking
- environmental issues and
- addiction.

Students will enjoy:

- the easy-to-use CD-ROM
- colourful interactive graphics
- classroom lessons using the enclosed Quest cards
- voice-overs to assist students with reading difficulties
- working on their own or with a partner in the classroom.

Teachers will appreciate:

- flexible, non-sequenced sample lesson plans
- the network enabled CD-ROM for use in computer labs
- several short, fun Quick Pick assignments for the whole class or individuals
- lessons designed to introduce students to the CD-ROM as a research tool.

